LIVERMORE LAB
REPORT

A weekly review of scientific and technological achievements from Lawrence Livermore National Laboratory, Oct. 24-28, 2011.

TAKING OVER THE HELM

Parney Albright

Penrose "Parney" C. Albright has been named the director of the Laboratory.

The appointment takes effect Dec. 1. Albright also will serve as president of Lawrence Livermore National Security, which manages the Lab.

Appointed with the concurrence of DOE, Albright is the 11th director of the Lab since it was established in 1952. He replaces George Miller, who is stepping down after six years as director and a 40-year career of service to the nation and the Laboratory.

Albright was selected after a nationwide search that began in June. Albright joined the Lab in 2009 as the principal associate director of Global Security, the Lab's program for applying science and technology to the nation's effort in counterterrorism, nonproliferation, defense, intelligence and energy needs.

Albright has more than 20 years of experience in the federal government and the private sector. He has extensive experience with interagency and congressional interactions, and was a spokesperson for both the White House and the Department of Homeland Security to the press and to the broad national research and development enterprise on issues associated with science, technology and weapons of mass destruction.

Albright holds a bachelor's degree in physics and applied mathematics from The George Washington University, and a master's and Ph.D. in physics from the University of Maryland.

To read more about Albright, see his bio.

ClimateWire

INCUBATOR TO HATCH CLEAN ENERGY TECH

The Laboratory has invited U.S. companies to partner with its scientists in advancing competitive clean energy technologies by using the Lab's supercomputer resources.

The goal is to attract several dozen proposals and will select a handful for a one-year pilot project.

"The key is to find companies that have an interest in creating partnerships, where their technologists and their engineers can sit down with teams of people at the Laboratory, with our computer scientists and experts in different energy technologies," finding critical challenges that high-speed computing can address, said Tomás Díaz de la Rubia, LLNL's deputy director for science and technology.

Companies are asked to submit brief initial descriptions of their proposals by Dec. 16 in five areas: energy efficiency for buildings; carbon capture and sequestration; liquid fuel combustion; nuclear energy; and smart grid technologies, power storage and renewable energy integration.

To read more, go to *Climate Wire*.

R&D

HEAD IN THE CLOUDS

Laboratory scientists and international collaborators have developed a new tool that will help scientists better represent the clouds observed in the sky in climate models.

Climate models have a hard time representing clouds accurately because they lack the spatial resolution necessary to accurately simulate the billowy air masses.

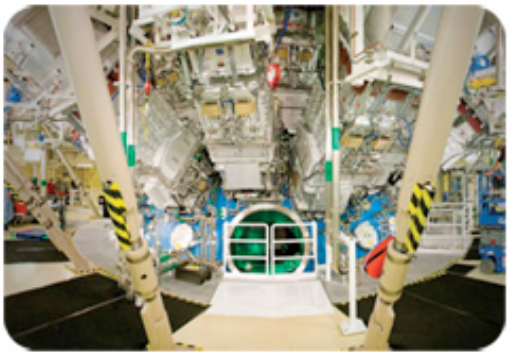
Traditionally, observations from satellites infer the properties of clouds from the radiation field (reflection of sunlight back into space, or thermal emission of the planet). However, to accurately utilize satellite data in climate model assessment, a tool is required that allows an apples-to-apples comparison between the clouds simulated in a climate model and the cloud properties retrieved from satellites.

"The models are becoming more interactive and are taking into account the radiation data from the satellite observations and is an important part of the process of making better climate models," said the Lab's Stephen Klein, who along with LLNL's Yuying Zhang and other collaborators, has developed the Cloud-Feedback-Model Intercomparison Project Observation Simulator Package (COSP).

The COSP is now used worldwide by most of the major models for climate and weather prediction, and it will play an important role in the evaluation of models that will be reviewed by the next report of the Intergovernmental Panel on Climate Change, Klein said.

To read more, go to *R&D* Magazine.

NewScientist A STAR NURSERY



A star soon will be born at the National Ignition Facility.

In an attempt to achieve fusion (the same energy that powers the stars and the sun), NIF researchers are using the world's largest and most energetic lasers in the hope of creating what could be a relatively clean energy source.

NIF is at the forefront of efforts to harness the power of fusion. It also is being used to understand how materials behave under extreme temperatures and pressures, similar to those found inside a detonating nuclear warhead.

To read more, go to *New Scientist*.

Greenwire FEEL THE NOISE

There's no picking and choosing when it comes to human-caused climate warming. For years, climate models and satellite temperature measurements have shown that the Earth is warming, mainly due to human causes.

However, some climate skeptics say that there is no indication of warming by looking at the last 10 years.

But in order to separate human-caused global warming from the "noise" of purely natural climate fluctuations, temperature records must be at least 17 years long, according to Laboratory climate scientists.

Laboratory scientists analyzed satellite measurements of the temperature of the lower troposphere (the region of the atmosphere from the surface to roughly five miles above the surface) and saw a clear signal of human-induced warming of the planet.

To read more, go to *Greenwire*.

The Record GIRL POWER

Elyssah Logitu, 12, left, solders a circuit board with help from Lawrence Livermore Lab's Angela Tooker, center. Photo by Craig Sanders/The Record

Close to 500 girls in grades 6-12 from San Joaquin County descended on the University of the Pacific in Stockton last weekend.

It wasn't to learn about the school itself, rather the Expanding Your Horizons conference's goal is to spur an interest by girls in math and science.

Several Laboratory employees volunteer at the event and host hands-on demonstrations.

Michael Taranowski, a Lab engineer, taught a class on soldering titled "Ubiquitous Electronics." During the 70-minute session, students learned how to make simple electronic toys that walked or displayed messages on LED screens.

To read more, go to *The Stockton Record*.

LLNL applies and advances science and technology to help ensure national security and global stability. Through multi-disciplinary research and development, with particular expertise in high-energy-density physics, laser science, high-performance computing and science/engineering at the nanometer/subpicosecond scale, LLNL innovations improve security, meet energy and environmental needs and strengthen U.S. economic competitiveness. The Laboratory also partners with other research institutions, universities and industry to bring the full weight of the nation's science and technology community to bear on solving problems of national importance.

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